DEC 0 2 2008

This report is required by law (7 USC 2143). Failure to report according to the regulations can result in an order to cease and desist and to be subject to penalties as provided for in Section 21!

See attached form for additional information.

Interagency Report Control No.

UNITED STATES DEPARTMENT OF AGRICULTURE
ANIMAL AND PLANT HEALTH INSPECTION SERVICE

1. CERTIFICATE NUMBER: 41-R-0005
CUSTOMER NUMBER: 547

FORM APPROVED
OMB NO. 0579-0036

ANNUAL REPORT OF RESEARCH FACILITY
(TYPE OR PRINT)

University Of Minnesota
Research Anmial Resources
Mmc351 Mayo 420 Delaware Street Se
(b)(2)High, (b)(7)(F)
Minneapolis, MN 55455

3. REPORTING FACILITY (List all locations where animals were housed or used in actual research, testing, or experimentation, or held for these purposes. Attach additional sheets if necessary)

FACILITY LOCATIONS (Sites) - See Atached Listing

REPORT OF ANIMALS USED BY OR UNDER CONTROL OF RESEARCH FACILITY (Attach additional sheets if necessary or use APHIS Form 7023A)

A. Animals Covered By The Animal Welfare Regulations	B. Number of animal being bred, conditioned, or held for use in teaching, testing, experiments, research, or surgery but not yet used for such purposes.	C. Number of animals upon which teaching, research, experiments, or tests were conducted involving no pain, distress, or use of pain-relieving drugs.	D. Number of animals upon which experiments, teaching, research, surgery, or tests were conducted involving accompanying pain or distress to the animals and for which appropriate anesthetic, analgesic, or tranquilizing drugs were used.	E. Number of animals upon which teaching, experiments, research, surgery or tests were conducted involving accompanying pain or distress to the animals and for wh the use of appropriate anesthetic, analgesic, or tranquiliz drugs would have adversely affected the procedures, res or interpretation of the teaching, research, experiments, surgery, or tests. (An explanation of the procedures producing pain or distress in these animals and the reasc such drugs were not used must be attached to this report	F. TOTAL NUMBER OF ANIMALS (COLUMNS C + D + E)
4. Dogs	10	66	322	20	448*
5. Cats	1	4	412		416*
6. Guinea Pigs	104	202	546		748
7. Hamsters	35	88	294		382
8. Rabbits	21	53	730		783
9. Non-human Primates	14	81	175		256
10. Sheep	11	13	174		187
11. Pigs	25	275	407		682
12. Other Farm Animals cow	40	81	93		174
goat	0		10		10
13. Other Animals horse	15	12	50		62
llama/alpaca			5		5
chinchilla	9		185		185
racoon			5		5

ASSURANCE STATEMENTS

1) Professionally acceptable standards governing the care, treatment, and use of animals, including appropriate use of anestetic, analgesic, and tranquilizing drugs, prior to, during, and following actual rese teaching, testing, surgery, or experimentation were followed by this research facility.

2) Each principal investigator has considered alternatives to painful procedures.

3) This facility is adhering to the standards and regulations under the Act, and it has required that exceptions to the standards and regulations be specified and explained by the principal investigator and ap Institutional Animal Care and Use Committee (IACUC). **A summary of all such exceptions is attached to this annual report.** In addition to identifying the IACUC-approved exceptions, this summary inc brief explanation of the exceptions, as well as the species and number of animals affected.

4) The attending veterinarian for this research facility has appropriate authority to ensure the provision of adequate veterinary care and to oversee the adequacy of other aspects of animal care and use.

CERTIFICATION BY HEADQUARTERS RESEARCH FACILITY OFFICIAL
Chief Executive Officer or Legally Responsible Institutional Official)

(b)(6), (b)(7)(C)

(b)(6), (b)(7)(C)

DATE SIGNED 11/25/08

, which is obsolete.)

*335 dogs and 396 cats and several other species were human society, shelter, student, agricultural unit, or client owned and returned.

NP

DEC 0 2 2008

This report is required by law (7 USC 2143) Failure to report according to the regulations can result in an order to cease and desist and to be subject to penalties as provided for in Section 2150

Set reverse side for additional information

Interagency Report Control No 0180-DOA-AN

UNITED STATES DEPARTMENT OF AGRICULTURE
ANIMAL AND PLANT HEALTH INSPECTION SERVICE

CONTINUATION SHEET FOR ANNUAL REPORT OF RESEARCH FACILITY
(TYPE OR PRINT)

1. REGISTRATION NO.
41-R-0005

FORM APPROVED
OMB NO. 0579-0036

2. HEADQUARTERS RESEARCH FACILITY (Name and Address, as registered with USDA include Zip Code)
Univeristy of Minnesota
Research Animal Resources
MMC 351 Mayor 420 Delaware St. S.E.
B305 PWB 516 Delaware St. S.E.
Minneapolis, MN 55455

REPORT OF ANIMALS USED BY OR UNDER CONTROL OF RESEARCH FACILITY (Attach additional sheets if necessary or use APHIS FORM 7023A)

A. Animals Covered By The Animal Welfare Regulations — 12 &/OR 13. Other (List by species)	B. Number of animals being bred, conditioned, or held for use in teaching, testing, experiments, research, or surgery but not yet used for such purposes	C. Number of animals upon which teaching, research, experiments, or tests were conducted involving no pain, distress, or use of pain-relieving drugs.	D. Number of animals upon which experiments, teaching, research, surgery, or tests were conducted involving accompanying pain or distress to the animals and for which appropriate anesthetic, analgesic, or tranquilizing drugs were used	E. Number of animals upon which teaching experiments, research, surgery, or tests were conducted involving accompanying pain or distress to the animals and for which the use of appropriate anesthetic, analgesic, or tranquilizing drugs would have adversely affected the procedures, results, or interpretation of the teaching, research, experiments, surgery, or tests. *(An explanation of the procedures producing pain or distress in those animals and the reasons such drugs were not used must be attached to this report)*	F. TOTAL NO OF ANIMALS (Cols. C + D + E)
blackbear			31		31
canadian lynx			2		2
lions			25		25
tigers			2		2
house mouse		5			5
long haired grass mouse		1			1
Nile Grass rats				40	40
red backed voles		5		23	28
peromyscus		53		35	88
meadow vole				13	13
13-lined ground squirrel		70	90	22	182
masked shrew				27	27
eastern chipmunk				44	44
~~meadow jumping mouses~~				3	3
red squirrel				1	1
northern short tailed shrew				5	5
arotic shrew				1	1
little brown bat				3	3

ASSURANCE STATEMENTS

1) Professionally acceptable standards governing the care, treatment, and use of animals including appropriate use of anesthetic, analgesic, and tranquilizing drugs, prior to, during and following actual research, teaching, testing, surgery, or experimentation were followed by this research facility.

2) Each principal investigator has considered alternatives to painful procedures.

3) This facility is adhering to the standards and regulations under the Act, and it has required that exceptions to the standards and regulations be specified and explained by the principal investigator and approved by the Institutional Animal Care and Use Committee (IACUC). A summary of all such exceptions is attached to this annual report. In addition to identifying the IACUC-approved exceptions, this summary includes a brief explanation of the exceptions, as well as the species and number of animals affected.

4) The attending veterinarian for this research facility has appropriate authority to ensure the provision of adequate veterinary care and to oversee the adequacy of other aspects of animal care and use

CERTIFICATION BY HEADQUARTERS RESEARCH FACILITY OFFICIAL

(Chief Executive Officer or Legally Responsible Institutional Official)

I certify that the above is true, correct, and complete (7 U.S.C. Section 2143).

(b)(6), (b)(7)(C)

(b)(6), (b)(7)(C)

DATE SIGNED
11/25/08

(AUG 91)

41-R-0005
University of Minnesota
Annual Report

There was one exception to the AWA regulations and standards approved by the IACUC during the reporting period.

The post-operative care program used to temporarily house dogs and pigs after surgery has kennels with approximately 20 square feet of floor space. That space meets the NIH and AWA guidelines for dogs up to 30 kg and pigs up to 50 kg but not over (over 30 kg dogs and pigs weighing between 50 and 100 kg should have 24 square feet). The kennels do have the opportunity for enlargement via the opening of an interconnecting side panel and this is done when a large weight dog or pig is present and the veterinarian's medical judgment is such that it is considered beneficial. If RAR veterinarians require limited exercise and movement for post-surgical patients, then the animals may be maintained in the 20 sq ft kennels, which is an exception to the standards. In practice, it is uncommon to have dogs over 30 kg in the postoperative care program. Pigs under post-operative care are generally 10-50 kg with an occasional patient weighing between 50-80 kg.

Column E Explanation

This form is intended as an aid to completing the Column E explanation. It is not an official form and its use is voluntary. Names, addresses, protocols, veterinary care programs, and the like, are not required as part of an explanation. A column E explanation must be written so as to be understood by lay persons as well as scientists.

1. Registration number: 41-R-005

2. Number of animals used in this study for the time period specified.
   October 1, 2007 – September 30, 2008: 40

3. Species used in this study:
   Grass Nile Rats (*Arvicantes*)

4. Explain the procedures producing pain or distress:

   No pain was involved in the study. Animals were exposed to swim stress for 5 minutes to explore despair-like behavior that is relevant to depression. This test (the Forced Swim Test) is frequently used in many rodent species as a screen for depressenogenic/antidepressant effects. In the current study, the test was utilized to evaluate the effects of short daylight exposure on the development of depression-like behaviors in a diurnal rodent. Major depression as well as seasonal affective disorder had been closely associated with changes in daylength and with circadian rhythms. The understanding of the underlying mechanisms of these devastating disorders as well as the attempts to develop better treatments for them may depend on the utilization of diurnal model animals to reflect changes in the diurnal human.

5. Provide scientific justification why pain and/or distress could not be relieved. State methods or means used to determine that pain or distress would interfere with test results:

   Since the induction of distress, in the form of despair-like behavior and/or depression, is the goal of this study and procedure, relief of that distress would fundamentally invalidate the scientific goals of the study.

6. What if any federal regulations require this procedure? None.

Column E Explanation

This form is intended as an aid to completing the Column E explanation. It is not an official form and its use is voluntary. Names, addresses, protocols, veterinary care programs, and the like, are not required as part of an explanation. A column E explanation must be written so as to be understood by lay persons as well as scientists.

1. Registration number: 41-R-005

2. Number of animals used in this study for the time period specified.
   October 1, 2007 – September 30, 2008: 20

3. Species used in this study: Dogs

4. Explain the procedures producing pain or distress:

   The established protocol used for this study is a urate synovitis model in which a 10mg/ml suspension of sodium urate is injected into the stifle of the dogs. An injectable anesthetic is used prior to the intra-articular injection. The urate induces temporary lameness with discomfort and mild swelling in the affected joint which resolves within 12-24 hours.

5. Provide scientific justification why pain and/or distress could not be relieved. State methods or means used to determine that pain or distress would interfere with test results:

   This study is evaluating a novel compound for its analgesic properties. The degree of lameness caused by the sodium urate is used to evaluate the efficacy of the investigational veterinary product using force platform gait analysis and visual assessment. Relieving the discomfort with established analgesics would interfere with the current study of the investigational product as it would make it impossible to determine if the drug under study alleviates the symptoms of lameness and discomfort.

   Dogs are evaluated at 6 timepoints in the first 24 hours by visual assessment and force platform gait analysis. As described in the protocol any animals that do not return to normal limb function at 24 hours will receive analgesia and be removed from the study.

6. What if any federal regulations require this procedure?

   Not applicable.

Column E Explanation

This form is intended as an aid to completing the Column E explanation. It is not an official form and its use is voluntary. Names, addresses, protocols, veterinary care programs, and the like, are not required as part of an explanation. A column E explanation must be written so as to be understood by lay persons as well as scientists.

1. Registration number: 41-R-005

2. Number of animals used in this study for the time period specified.
   October 1, 2007 – September 30, 2008:

   A grand total of 173* animals were trapped during the Field Studies in Mammalogy course. See below for a list by species.

   * individuals of some species were not individually marked, so all captures are included

3. Species used in this study:

Species	Number of Individuals
Northern Short-tailed Shrew – *Blarina brevicauda*	5
Meadow Vole -- *Microtus pennsylvanicus*:	10
Southern Red-backed Vole -- *Myodes gapperi*:	23
Little Brown Bat -- *Myotis lucifugus*	3*
Deer Mouse or White-footed Mouse -- *Peromyscus*:	34
Artic Shrew – *Sorex articus*:	1
Masked Shrew -- *Sorex cinereus*:	27
Thirteen-lined Ground Squirrel -- *Spermophilus tridecemlineatus*:	22*
Eastern Chipmunk -- *Tamias striatus*:	44*
Red Squirrel – *Tamiasciurus hudsonicus*:	1*
Meadow Jumping Mouse – *Zapus hudsonius*:	3

   * individuals of these species were not individually marked, so all captures are listed

4. Explain the procedures producing pain or distress:

   Restraint in live traps is not known to cause undue distress.

   Animals were briefly handled before release at the point of capture. Individuals that were marked were marked by toe-clipping. Tips of digits were removed using surgical scissors immediately prior to release.

5. Provide scientific justification why pain and/or distress could not be relieved. State methods or means used to determine that pain or distress would interfere with test results:

   Toe-clipping is a commonly used procedure which likely causes some pain and distress in the short-term. Toe loss is seen naturally in wild populations. Frequently during live-trapping studies, individuals are observed to lose toes naturally with no known impact to survival. Additionally, during studies during which I checked traps at three-hour intervals, some mice initially toe-clipped would be captured again at the next trap check, implying that they did not associate the experience of being trapped and toe-clipped in a negative fashion.

This method is fast and simple. The impact on natural populations is minimal compared to many other options. Animals are released immediately following toe-clipping, thus enabling them to get back to their home ranges and/or nests. This is preferable to restraining or relocating animals, even briefly, to the lab. Since we are looking at populations in their natural environments, removal of animals or additional, prolonged interference would further impact their use of the natural environment.

For further information on marking techniques please see: Research and Management Techniques for Wildlife and Habitats. 1994. Bookhout, T.A., Ed. The Wildlife Society.

6. What if any federal regulations require this procedure?

None.

Column E Explanation

This form is intended as an aid to completing the Column E explanation. It is not an official form and its use is voluntary. Names, addresses, protocols, veterinary care programs, and the like, are not required as part of an explanation. A column E explanation must be written so as to be understood by lay persons as well as scientists.

1. Registration number: 41-R-005

2. Number of animals used in this study: For the time period specified October 1, 2007 – September 30, 2008: peromyscus (1), vole (3)

3. Species used in this study: peromyscus (1), vole (3)

4. Explain the procedures producing pain or distress:

Wild, free-ranging animals were live trapped in Sherman traps. This is an aluminum box with spring loaded doors that close behind the animal trapping it inside. Traps were baited with oats. Traps were set in early evening and checked at dawn (pre-breakfast) the following morning. Animals were identified to species, powdered with fluorescent powder, and released. Total time in the trap was a maximum of 8 hours. Total handling time, about 3 minutes. To add powder, the vole was placed in a Ziploc plastic bag full of powder for about 30 seconds. Powder clings to the pelt naturally. The baggie is then lowered to the ground, opened, and the animal runs free.

5. Provide scientific justification why pain and/or distress could not be relieved. State methods or means used to determine that pain or distress would interfere with test results:

There was no pain experienced by these animals. Distress is also debatable. The animals were well fed when released, and being handled briefly to add powder incurs minimal distress. This is a class exercise to demonstrate the field method of powdering small mammals. We returned to the site of release the following evening to track the powder trails with uv lamps. The trails reveal use of structure in the habitat and in population studies, territorial boundaries, location of nests and even parentage (if powder is transferred to pups in the den).

6. What if any federal regulations require this procedure?

I don't think this question is applicable.